

What is claimed is:

1. A reclining vehicle seat hinge assembly comprising, in combination:

a first housing;

a second housing rotatable with respect to the first housing, and having a circular shoulder and a plurality of teeth extending radially inward from the shoulder;

a primary cam member rotatable with respect to the first housing and having a pair of primary camming surfaces;

a secondary cam member rotatably driveable by the primary cam and having a plurality of camming surfaces;

a pair of diametrically opposed primary pawls, each primary pawl slidable radially with respect to the first housing, having a first and a second cam engaging member and a plurality of radially outward extending teeth, and configured to be driven radially outward by engagement with the primary cam into an engaged position where the teeth of the primary pawl engage with the teeth of the second housing, and to be driven radially inward by the secondary cam into a disengaged position where the teeth of the primary pawl are free of the teeth of the second housing;

a pair of diametrically opposed secondary pawls, each secondary pawl slidable radially with respect to the first housing, having a plurality of radially outward extending teeth, and configured to be driven radially outward by engagement with the secondary cam into an engaged position where the teeth of the secondary pawl engage with the teeth of the second housing, and to be driven radially inward by engagement with the secondary cam into

a disengaged position where the teeth of the secondary pawl are free of the teeth of the second housing.

2. The reclining vehicle seat hinge assembly of claim 1, further comprising a primary spring operable to bias the primary cam into an engaged position.
3. The reclining vehicle seat hinge assembly of claim 1, further comprising a secondary spring operable to rotatably bias the secondary cam with respect to the primary cam.
4. The reclining vehicle seat hinge assembly of claim 1, wherein the first housing has a plurality of guide surfaces along which the primary pawls and secondary pawls travel.
5. The reclining vehicle seat hinge assembly of claim 1, wherein the secondary cam comprises
 - a first pair of diametrically opposed slots having first and second camming surfaces configured to drive the secondary pawl into engaged and disengaged positions; and
 - a second pair of diametrically opposed slots having a camming surface configured to engage a corresponding primary pawl to drive the primary pawl into its disengaged position.
6. A reclining vehicle seat hinge assembly comprising, in combination:
 - a seat pan;
 - a seat back pivotally connected to the seat pan; and
 - a hinge assembly pivotally connecting the seat back to the seat pan and comprising

a first housing secured to the seat pan;

a second housing secured to the seat back, pivotable with respect to the first housing, and having a circular shoulder and a plurality of teeth extending radially inward from the shoulder;

a primary cam member rotatable with respect to the first housing and having a pair of primary camming surfaces;

a secondary cam member rotatably driveable by the primary cam and having a plurality of camming surfaces;

a pair of primary pawls, each primary pawl slidable radially with respect to the first housing upon engagement with a corresponding primary camming surface of the primary cam and a corresponding camming surface of the secondary cam, and having a plurality of radially outward extending teeth engageable with the teeth of the second housing; and

a pair of secondary pawls slidable radially with respect to the first housing upon engagement with a corresponding camming surface of the secondary cam and having a plurality of radially outward extending teeth engageable with the teeth of the second housing, the secondary pawls having a construction identical to that of the primary pawls.

7. A reclining vehicle seat hinge assembly comprising, in combination:

a first housing having a plurality of guide surfaces formed thereon;

a second housing rotatable with respect to the first housing, and having a circular shoulder and a plurality of teeth extending radially inward from the shoulder;

a primary cam rotatable with respect to the first housing and having a pair of primary camming surfaces;

a primary spring engageable with the primary cam member to bias the primary cam member into an engaged position;

a secondary cam rotatably driveable by the primary cam and having a first pair of diametrically opposed slots having first and second camming surfaces, and a second pair of diametrically opposed slots having a camming surface;

a secondary spring engageable with the secondary cam to rotatably bias the secondary cam with respect to the primary cam;

a pair of diametrically opposed primary pawls, each primary pawl slidable along a corresponding pair of guide surfaces of the first housing, having a plurality of radially outward extending teeth and a first and a second cam engaging member, the second camming member engageable by a corresponding primary camming surface of the primary cam to drive the primary pawl into an engaged position where the teeth of the primary pawl engage with the teeth of the second housing, the first cam engaging member engageable by a camming surface of a corresponding one of the second pair of slots to drive the primary pawl into a disengaged position where the teeth of the primary pawl are free of the teeth of the second housing;

a pair of diametrically opposed secondary pawls, each secondary pawl slidable along a corresponding pair of guide surfaces of the first housing, having a plurality of radially outward extending teeth and first and second cam engaging members, the first cam engaging member engageable by a corresponding first camming surface of a corresponding one of the first pair of slots to drive the secondary pawl radially outward into an engaged position where

the teeth of the secondary pawl engage with the teeth of the second housing, the first cam engaging member engageable by a corresponding second camming surface of the corresponding one of the first pair of slots to drive the secondary pawl into a disengaged position where the teeth of the secondary pawl are free of the teeth of the second housing.